

REMARKS

Claims 1, 3, 5, 7, 9 and 12 have been amended, claims 2, 8, 21 and 22 have been canceled and new claims 23-25 have been added. Upon entry of this amendment claims 1, 3-7, 9-20 and 23-25 will be pending in the application.

- \* Attached hereto is a marked-up version of the changes made by this amendment. The attached pages are captioned "Version With Markings to Show Changes Made."

Supplemental Information Disclosure Statements

Applicants note that a Supplemental Information Disclosure Statement was filed in connection with the subject application on January 2, 2003.

- \* Enclosed herewith is a second Supplemental Information Disclosure Statement which lists on the Form PTO/SB/08A the same references submitted with the Supplemental Information Disclosure Statement filed January 2, 2003 and two additional references, U.S. Patent Nos. 4,401,810 (Tang, et al.) and 5,674,358 (Espy).

- \* Since the second Supplemental Information Disclosure Statement was filed after the mailing date of the first Office action on the merits, applicants enclose a check in the amount of \$180.00 in payment of the fee under 37 C.F.R. §1.17(p).

Applicants request that the information submitted with the second Supplemental Information Disclosure Statement be considered in connection with the subject application and a copy of the initialed Form PTO/SB/08A be returned the with next communication from the Patent Office in connection with this application.

Allowable Subject Matter

Applicants acknowledge the indication of allowable subject matter in original dependent claims 5, 6, 15 and 16.

Original dependent claim 5 has been rewritten in independent form as new claim 23. Accordingly, applicants respectfully submit that new claim 23 and new dependent claims 24 and 25 are in condition for allowance.

Rejections under 35 U.S.C. §102

Reconsideration is respectfully requested of the rejection of claims 1-4 and 11 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,935,437 (Taylor). Applicants submit that the invention defined in the claims as presently amended is novel and patentable over Taylor.

It has been observed that a strong, unpleasant odor is sometimes emitted from finished paper hand towels and other cellulosic paper products when the towels are wetted (i.e., re-wetted after final drying of the base sheet from which the towel is made). Malodor release upon re-wetting is particularly problematic in paper products made from cellulosic base sheets that have been through-air dried at relatively high air temperatures.

In accordance with the present invention, applicants have discovered that the introduction of sodium bicarbonate into the aqueous suspension of paper-making fibers used to manufacture a cellulosic paper product reduces the generation of malodors once the dried paper product is re-wetted during use. Wet-laid webs formed from aqueous suspensions of papermaking fibers containing sodium bicarbonate can advantageously be through-air dried at higher drying gas temperatures and shortened dryer residence times with concomitant improvement in process throughput and productivity, while significantly reducing malodor produced upon re-wetting the dried base sheets or finished cellulosic paper products made from the base sheets.

Independent claim 1, as amended, is directed to a process for making a cellulosic paper product and requires forming an aqueous suspension of papermaking fibers; introducing sodium bicarbonate into the aqueous suspension; depositing the aqueous suspension onto a sheet-forming fabric to form a wet web; and through-drying the wet web by passing heated air through the wet web. Independent claim 12 includes the further requirement of introducing sodium bicarbonate into the aqueous suspension prior to depositing the aqueous suspension onto the sheet-forming fabric as is preferred in the practice of the present invention.

Taylor discloses a process for making a pigment-filled paper of high brightness and opacity while reducing the losses of pigment in the papermaking machine. An aqueous suspension or slurry of papermaking fibers is formed to which is added finely divided hydrated amorphous calcium silicate while maintaining the pH of the slurry of from 4 to 9.2 by addition of an acidic material. Acid salts such as sodium bicarbonate are included among the many disclosed acidic materials. The acidic material is said to react and form a water insoluble salt of the calcium silicate which precipitates and adheres firmly to the papermaking fibers in the slurry to reduce pigment losses in the papermaking machine. After precipitation of the calcium silicate on the cellulosic fiber surfaces, the slurry is sheeted into paper on the wire of a papermaking machine. The web is couched from the wire and subsequently dried, calendered and optionally coated according to conventional procedures (See col. 4, lines 48-59).

Taylor fails to disclose any details of the method used to dry the web, much less teach that the web be through-dried by passing heated air through the web as required in claim 1.

Accordingly, applicants respectfully submit that the invention defined in claim 1 as amended and claims depending therefrom is not anticipated by Taylor.

Rejections under 35 U.S.C. §103

Reconsideration is respectfully requested of the rejection of claims 7-10, 12-14 and 17-20 under 35 U.S.C. §103(a) based on the disclosure of Taylor in view of U.S. Patent No. 6,488,812 (Shannon, et al.). The invention defined in the pending claims is submitted as patentable over the disclosure of Taylor and Shannon.

All of the rejected claims now require that the web be through-dried by passing heated air through the web. As noted above, the problem of malodors released upon re-wetting of paper hand towels and other cellulosic paper products is particularly present in paper products made from cellulosic base sheets that have been through-air dried. This phenomenon is perhaps due to

the highly oxidative environment and unique mass transfer phenomena provided by the heated air stream passing through the wet-laid web of papermaking fibers.

The process disclosed by Taylor is discussed above. As acknowledged in the Office action, Taylor fails to teach through-air drying the web.

Shannon discloses a method of making a paper sheet which includes forming an aqueous suspension of papermaking fibers; depositing the suspension onto a sheet-forming fabric to form a web; and dewatering and drying the web to form a paper sheet. In accordance with the principal teaching of the disclosed method, a synthetic polymer having a portion of its structure derived from the polymerization of acrylamide and containing an aliphatic hydrocarbon moiety is added to the aqueous suspension of papermaking fibers. The synthetic polymer additive is said to reduce lint and slough in the paper sheet. Shannon discloses various ways of drying the web, including using a canvas under tension to hold the partially dewatered web or sheet against a steam heated, convex surface metal dryer maintained at 213°F (101°C) (See col. 11, lines 6-55) as well as by through-air drying using supply air heated to about 390°F (199°C) (See col. 14, lines 32-64).

Applicants respectfully submit that the Examiner's combination of Taylor and Shannon in an attempt to overcome the admitted deficiencies of the primary reference fails to establish a *prima facie* case of obviousness with respect to the claimed invention.

In order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to combine the reference teachings. A teaching, suggestion or motivation to combine reference teachings is an essential element of an obviousness rejection. The teaching or suggestion to make the combination must be found in the prior art, not in applicants' disclosure. Moreover, it is clear that even if a combination of references teaches each and every element of the claimed invention, in the absence of a motivation to combine found in the

prior art, a *prima facie* case of obviousness is lacking. MPEP 2143.01.

At page 3 of the Office action, the Examiner states that it would have been obvious to one of ordinary skill in the art to combine the teachings of Taylor and Shannon and through-air dry the web prepared in accordance with the primary reference because such a combination would provide additional means of drying of the web produced in the process of Taylor. However, with all due respect, applicants submit that neither Taylor nor Shannon individually or if combined teach or suggest the claimed process which requires introducing sodium bicarbonate into an aqueous suspension of papermaking fibers to inhibit potential malodors produced upon re-wetting a base sheet formed by through-air drying the wet web.

The addition of the acidic material to the slurry of papermaking fibers as taught by Taylor has nothing to do with odor control in paper products produced from the slurry, but instead is solely for the purpose of precipitating a water insoluble salt of calcium silicate onto the surfaces of the cellulosic fibers to inhibit pigment losses in the papermaking machine. Nothing in the primary reference teaches or suggests that through-air drying be employed, much less that sodium bicarbonate be selected from the myriad of other suitable acidic materials disclosed to combat odor problems upon re-wetting of the through-air dried product. Although Shannon does disclose through-air drying of a web during a papermaking process, the reference also discloses drying a partially dewatered sheet by holding it against a steam heated metal surface with no teaching whatsoever that would motivate one of ordinary skill in the art to choose one method over the other. More importantly, like the primary reference, Shannon fails to recognize odor problems attendant re-wetting through-air dried cellulosic paper products and would in no way teach or suggest that the addition of sodium bicarbonate as disclosed in Taylor to reduce pigment losses would somehow have possible application in combating such odor problems. It is only through impermissible hindsight that

applicants' discovery of introducing sodium bicarbonate into an aqueous suspension of papermaking fibers to solve a problem unrecognized in the cited art might appear to be motivated by the teachings of these references.

In view of the above, applicants respectfully submit that the invention defined in independent claims 1 and 12 and claims 3-7, 9-11 and 13-20 depending therefrom are patentable over Taylor and Shannon.

Favorable reconsideration and allowance of all pending claims are respectfully solicited.

The Commissioner is requested to charge any fee deficiency in connection with this amendment to Deposit Account 19-1345.

Respectfully submitted,

A handwritten signature in black ink, reading "Vincent M. Keil". The signature is written in a cursive, flowing style with a large initial "V".

Vincent M. Keil, Reg. No. 36,838  
SENNIGER, POWERS, LEAVITT & ROEDEL  
One Metropolitan Square, 16th Floor  
St. Louis, Missouri 63102  
(314) 231-5400

VMK/ACW/msc

\*Attachments/Enclosures

Express Mail Label No. EV 233498819 US

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Claim 1 has been amended as follows:

1. (amended) A process for manufacturing a cellulosic paper product, the process comprising:  
forming an aqueous suspension of papermaking fibers;  
introducing sodium bicarbonate into said aqueous suspension;  
depositing said aqueous suspension onto a sheet-forming fabric to form a wet web; and

[dewatering and] through-drying said wet web by passing heated air through said wet web.

Claim 2 has been canceled.

Claim 3 has been amended as follows:

3. (amended) A process as set forth in claim [2] 1 wherein said aqueous suspension has a pH of from about 7.5 to about 8.5 after said sodium bicarbonate is introduced into said suspension.

Claim 5 has been amended as follows:

5. (amended) A process as set forth in claim [2] 1 wherein said sodium bicarbonate is introduced into said aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension.

Claim 7 has been amended as follows:

7. (amended) A process as set forth in claim [2] 1 wherein [said wet web is dried by passing a heated gas through said wet web, said heated gas having a temperature of] the temperature of said heated air is at least about 190°C.

Claim 8 has been canceled.

Claim 9 has been amended as follows:

9. (amended) A process as set forth in claim [8] 7 wherein the temperature of said heated air is from about 190° to about 210°C.

Claim 12 has been amended as follows:

12. (amended) A process for making a cellulosic paper product, the process comprising:  
forming an aqueous suspension of papermaking fibers;  
introducing sodium bicarbonate into said aqueous suspension;  
depositing said aqueous suspension onto a sheet-forming fabric to form a wet web, said sodium bicarbonate being introduced into said aqueous suspension prior to depositing said aqueous suspension onto said sheet-forming fabric; and  
through-drying said wet web by passing heated air through said wet web.

Claims 21 and 22 have been canceled.

New claims 23-25 have been added.